Lab 7: Hello detector.

To code a system that would detect when a user typed the word “hello” I used a state machine. The state machine I designed had five states. One state for each individual letter h, e, l, o and a state where the system responds back with hello. The main idea for the code was if reads the next letter it moves states, if it still detects the last letter, it stays the same state, and if any other ascii value is detected it goes back to the H state. The first problem came in with L since it a repeated value. I solved this by using busy variable as clock in a counter that counted when L was pressed. If the system was in any state other than the L state, the counter would reset to zero. Lastly, I had the L state switch to the o state when the counter equaled 2. The next problem I ran into was that the system would switch from the o state to h state instead of the hello state. This ended up being because I forget to modify the length of the state and next state array to 3 bits. I then assign statements that when the state is the Hello state would display “Hello” on the 7 segment displays.

